REMARKS/ARGUMENTS

The Office Action mailed April 29, 2008 has been carefully reviewed. Reconsideration of this application, as amended and in view of the following remarks, is respectfully requested. The claims presented for examination are: claims 1, 9, 20, 26, 50, and 61.

Restriction Requirement

In response to the Election/Restrictions Requirement, Applicants elected, without traverse, the following species for prosecution: "Species V. a shape memory material body comprising a Ni-Zn-Fe-O powder for example, see claim 9)." Numbered paragraph 1 the Office Action mailed April 29, 2008 states:

> Applicant's election *without traverse of Species V in the* reply filed *on January* 24, 2008 is acknowledged. In response to the Election/Restriction applicants have elected species V, a shape memory material body comprising a Ni-Zn-Fe-O powder as recited *in* claim 9. Applicants also identified claims 1, 9, 12, 13, *14,15, 16, 20, 23, 26,* 27, *28,* 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 50, 53, 54, 55, 56, 57, 61, 64, 68, *69, 70, 71,* 72, 73, *74, 75, 76,* 77, *78,* 79, *80,* 81, *82, 83, 86, 87, 88, 89, 90, 91,* 92 and 93 as readable on the elected species. The Examiner has identified only claim 1 as a *generic claim,* Claims 12, 13, *14,15, 16, 23,* 27, *28, 29, 30, 31,* 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 53, 54, 55, 56, 57, 64, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 86, 87, 88, 89, 90, 91, 92 and 93 do not recite a shape memory material body comprising a Ni-Zn-Fe-O powder and therefore are not readable on the elected species which is a shape memory material body comprising a Ni-Zn-Fe-O powder as recited in claim 9. Only claims 9, 20, 26, 50 and 61 read on a shape memory material body comprising *a Ni-Zn-Fe-O* powder. *Accordingly,* claims *9, 20, 26, 50 and 61 in* addition to generic claim 1 have been examined.

Applicants' Invention

Applicants' invention is described in the portions of Applicants' original specification quoted below and illustrated in Applicants' original drawing FIG. 4 reproduced below.

> Referring now to FIG. 4, another embodiment of the present invention is illustrated. The system is designated generally by the reference numeral 400.

An actuator 403 is carried by a catheter 401. The catheter 401 and actuator 403 are shown inside a patient 402. An inductive coil 405 is located outside the body 402 creating magnetic field lines 404. The actuator 403 acts on the patient 402 through the inductive coil 405 that activates the actuator 403.

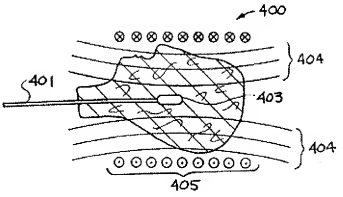

FIG. 4

The system 400 provides a method of actuating a device in order to perform an activity on a subject such as the patient 402. The subject can also be an animal or other subject. A shape memory material body is formed in a specific primary shape, reformed into a secondary stable shape, controllably actuated to recover the specific primary shape, and located in a desired position with regard to the subject. The shape memory material body is controllably actuated causing it to recover said specific primary shape and perform the activity on the subject. Some examples of activities that can be performed on a subject are described in the following patents; however, there are other activities that can be performed on a subject. United States Patent No. 5,895,398 shows a method of using a clot capture coil. United States Patent No. 5, 911,737 shows microfabricated therapeutic actuators. United States Patent No. 6,059,815 shows microfabricated therapeutic actuators. United States Patent No. 6, 102,917 shows a system for releasing a target material, such as an embolic coil from an SMP located at the end of a catheter utilizing an optical arrangement for releasing the material. United States Patent Application No. 2002/0095169 shows a shape memory polymer actuator and catheter for acting upon a material in a vessel. United States Patent Application No. 2003/0236533 shows a shape memory polymer actuator and catheter for removing an occlusion from a vessel. The patents and the patent application are incorporated herein by reference.

The present invention provides a system utilizing a shape memory material with integrated actuation using embedded particles. One embodiment of the present invention provides a shape memory material apparatus comprising a

shape memory material body and magnetic pieces in the shape memory material body. Another embodiment of the present invention provides a shape memory material apparatus comprising shape memory material body means for being formed in a specific primary shape, reformed into a secondary stable shape, and controllably actuated to recover the specific primary shape, and magnetic piece means in the shape memory material body means for allowing the shape memory material body means to be controllably actuated to recover the specific primary shape. Another embodiment of the present invention provides a method of actuating a device to perform an activity on a subject comprising the steps of positioning a shape memory material body in a desired position with regard to the subject, the shape memory material body capable of being formed in a specific primary shape, reformed into a secondary stable shape, and controllably actuated to recover the specific primary shape; including pieces in the shape memory material body; and actuating the shape memory material body using the pieces causing the shape memory material body to be controllably actuated to recover the specific primary shape and perform the activity on the subject.

Particle Material – There are a number of particle materials that can be used in this invention. A number of materials with low curie temperatures (40-100 degrees Celsius) are well suited. These materials include Ni-Si, Fe-Pt, and Ni-Pd alloys. A number of magnetic powders can be used including Ni-Zn-Fe-O, Ba-Co-Fe-O, and Fe-O. Another material is a substituted magnetite or ferric oxide crystalline lattice with a portion of the iron atoms substituted by one of the following, cobalt, nickel, manganese, zinc, magnesium, copper, chromium, cadmium, or gallium. A Palladium Cobalt alloy that also has a controllable curie temperature in the range of 40-100 degrees Celsius can also be used. Nickel Zinc Ferrite (a soft ferrite) can also be used. A very useful property of this material is that its curie temperature can be greatly influenced by the amount of Zinc present in the material. Curie temperatures ranging from 30-600 degrees Celsius are achievable [Strontium Ferrite (a hard ferrite) and Nickel (an elemental ferromagnetic material) can be used as heating particulates. These materials were calculated to produce heating rates of 1 degree Celsius per second in a field in which Nickel Ferrite was estimated to produce 50 degrees Celsius per second.

The optimum material for the heating the particles is an aspect of the present invention. A number of materials with low curie temperatures (40-100 degrees Celsius) are available. These materials include Ni-Si, Fe-Pt, and Ni-Pd alloys. Also available are a number of magnetic powders and magnetic fluids including Ni-Zn-Fe-O, Ba-Co-Fe-O, and Fe-O. There is also a material that is a substituted magnetite or ferric oxide crystalline lattice with a portion

of the iron atoms substituted by one of the following, cobalt, nickel, manganese, zinc, magnesium, copper, chromium, cadmium, or gallium.

335 U.S.C. § 103 Rejection

In numbered paragraph 3 of the Office Action mailed April 29, 2008, claims 1, 9, 20, 26, 50, and 61 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the Muller-Schulte Published Patent Application No. 2005/0175702 (hereinafter "Muller-Schulte") in view of Condensed Chemical Dictionary and McCurrie.

The rejection of claims 1, 9, 20, 26, 50, and 61 under 35 U.S.C. § 103(a) is respectfully traversed. Applicants' have amended claims 1, 9, 20, 26, 50, and 61. Applicants' claimed invention is a specific combination of claim elements specified in amended claims 1, 9, 20, 26, 50, and 61. Neither the Muller-Schulte reference or the Condensed Chemical Dictionary reference or the McCurrie reference shows or suggests the specific combination of claim elements specified in Applicants' amended claims 1, 9, 20, 26, 50, and 61.

***Prima Facie* Case of Obviousness Has Not Been Established**

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966) that are applied for establishing a background for determining obviousness under 35 U.S.C. § 103(a) include, "Ascertaining the differences between the prior art and the claims at issue." The Examiner bears the initial burden of factually supporting a *prima facie* conclusion of obviousness (M.P.E.P. Section 2142). Three basic criteria must be met in order for the Examiner to establish a *prima facie* case of obviousness. The prior art reference (or reference when combined) must teach or suggest all the claim limitations. There must be a reasonable expectation of success with the proposed combination. The Examiner must follow the "Examination Guidelines for Determining Obviousness in Light of the Supreme Court's KSR v. Teleflex Decision" published October 10, 2007.

These guidelines include the requirement that the Examiner provide reasons for combining the references to produce the proposed combination.

References Do Not Teach All Claim Limitations

The criteria that prior art reference, or references when combined, must teach or suggest all the claim limitations has not been met. The Muller-Schulte and Condensed Chemical Dictionary and McCurrie references do not disclose a number of Applicants' claim limitations. The Muller-Schulte and the Condensed Chemical Dictionary and McCurrie references do not disclose the limitations of Applicants' claims 1, 9, 20, 26, 50, and 61 identified below.

"a catheter adapted to be positioned to perform an activity on a patient," or

"an actuator carried by said catheter," or

"said actuator including a shape memory material body," or

"magnetic pieces in said shape memory material body, said magnetic pieces being a Ni-Zn-Fe-O magnetic materials," or

"wherein said Ni-Zn-Fe-O magnetic materials comprises a Ni-Zn-Fe-O magnetic powder or Ni-Zn-Fe-O magnetic fluid," or

"wherein said Ni-Zn-Fe-O magnetic materials comprise a Ni-Zn-Fe-O magnetic powder."

Since the limitations listed and described above are not shown by the Muller-Schulte reference or the Condensed Chemical Dictionary reference or the McCurrie reference, a *prima facie* case of obviousness has not been established. Further, since the Muller-Schulte, Condensed Chemical Dictionary, and McCurrie references fail to show the claim limitations of Applicants' amended claims 1, 9, 20, 26, 50, and 61 there can be no combination of the three references that would show Applicants' invention. There is no combination of the Muller-Schulte and the Condensed Chemical Dictionary and McCurrie references that

would produce the combination of elements of Applicants' amended claims 1, 9, 20, 26, 50, and 61. Thus, the combination of references in the Office Action mailed April 29, 2008 fails to support a rejection of amended claims 1, 9, 20, 26, 50, and 61 under 35 U.S.C. § 103(a), and the rejection should be withdrawn.

Teaching-Suggestion-Motivation (TSM) Test

The Office Action mailed April 29, 2008 does not meet the teaching-suggestion-motivation (TSM) test. The TSM test is "whether there is something in the prior art to suggest the desirability, and thus the obvious nature, of the combination of the references." The Office Action mailed April 29, 2008 does not point to anything in the prior art to suggest the desirability, and thus the obvious nature, of the combination of the references. Further there are no "other "reasons" for combining the Muller-Schulte reference and the Condensed Chemical Dictionary reference and McCurrie reference.

Thus, the combination of references in the Office Action mailed April 29, 2008 fails to support a rejection of amended claims 1, 9, 20, 26, 50, and 61 under 35 U.S.C. § 103(a), and the rejection should be withdrawn.

No Reasons for Combining References

The criteria that the Examiner must provide reasons for combining the references has not been established. The Examiner must follow the "Examination Guidelines for Determining Obviousness in Light of the Supreme Court's KSR v. Teleflex Decision" published October 10, 2007. These guidelines include the requirement that the Examiner provide reasons for combining the references to produce the proposed combination.

The rejection in the Office Action mailed April 29, 2008 does not provide an explanation of how or why the Muller-Schulte reference and the Condensed Chemical Dictionary reference and McCurrie reference would be combined.

The Muller-Schulte reference and the Condensed Chemical Dictionary reference and McCurrie reference do not recognize the problem solved by Applicant's claimed invention. The Muller-Schulte reference and the Condensed Chemical Dictionary reference and McCurrie reference fail to disclose the benefits of Applicants claimed invention. Thus, the combination of references in the Office Action mailed April 29, 2008 fails to support a rejection of amended claims 1, 9, 20, 26, 50, and 61 under 35 U.S.C. § 103(a), and the rejection should be withdrawn.

SUMMARY

The undersigned respectfully submits that, in view of the foregoing amendments and the foregoing remarks, the rejections of the claims raised in the Office Action dated April 29, 2008 have been fully addressed and overcome, and the present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that the claims be allowed, and that this case be passed to issue. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned attorney at (925) 424-6897.

Respectfully submitted,

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Livermore, California
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